

## REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

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 FACIL:50-250 Turkey Point Plant, Unit 3, Florida Power and Light C 05000250  
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SUBJECT: Rev 1 to special rept:on 900527,facility standby feedwater pumps unavailability.

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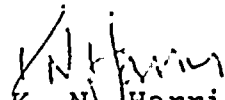
Re: Turkey Point Unit 3  
Docket No. 50-250  
Unit 3 Standby Feedwater Pumps Unavailability, Revision 1 to  
Special Report (Technical Specification 3.20.1, Action 2.b)

On May 27, 1990, at 1300 EDT, Florida Power & Light discovered that both non-safety related standby feedwater pumps were unavailable for Turkey Point Unit 3. In accordance with the requirements of Technical Specification (TS) 3.20.1, Standby Feedwater System" and TS 6.9.3.j., a Special Report, FPL letter 90-206 was issued on June 19, 1990, to describe the failure and corrective actions taken.

The attached report is revision 1 to that Special Report. This revision provides additional information on cause, design requirements, and the maintenance history of the valve and bushing that failed.

Should you have any questions please contact us.

Very truly yours,

  
K. N. Harris  
Vice President  
Turkey Point Plant - Nuclear

KNH/DRP/DPS/ds

attachment

cc: Stewart D. Ebnetter, Regional Administrator, Region II, USNRC  
Senior Resident Inspector, USNRC, Turkey Point Plant

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## ATTACHMENT 1

### 1. Event Description:

On May 27, 1990, at 1300 EDT, with Unit 3 in Mode 2 (Start-up) at zero power, Florida Power & Light (FPL) discovered that both standby feedwater pumps were unavailable for Turkey Point Unit 3 using the normal path (see discussion of optional paths in section 4). This condition was discovered while aligning the standby feedwater pumps to supply feedwater to the steam generators. Valve DWDS-3-012 (a non-safety related commercial grade valve) could not be opened. Since this valve is in the common discharge header to Unit 3 for the standby feedwater pumps, both pumps were unavailable to Unit 3. However, both pumps were available to Unit 4. The standby feedwater pumps were to be used while 3A steam generator feedwater pump (SGFP) was out of service for maintenance.

### 2. Cause:

Mechanical failure of a valve stem bushing on valve DWDS-3-012 (a non-safety related commercial grade valve) made the valve handwheel inoperable. Examination of the failed bushing indicated the failure was caused by over-stress of the bushing. There was no indication of embrittlement or other aging factors, manufacturing flaws, or other potential causes for this failure. The over-stress condition is believed to be the result of the use of a valve wrench during this operation (or a previous operation) of the valve.

### 3. Corrective Actions:

#### A. Immediate Corrective Actions

Immediate attempts were made to locate a replacement for the failed bushing. When a replacement could not readily be obtained; a replacement bushing was manufactured on-site, approved as acceptable by engineering, and installed. Valve DWDS-3-012 was successfully test operated and on May 31, 1990, at 1930 EDT, was declared operable.

#### B. Generic Concern Review

An review of plant records was made to locate other installed valves of this type. A sample of other valves of this type would have either been disassembled for inspection of their bushings or would have been test operated, if plant operating conditions permitted, to determine if the bushing failure was a generic concern.

A review of plant records showed this valve to be the only one of this type installed at Turkey Point. A review of the maintenance records indicated no previous failures of this valve or this bushing. A review of the maintenance records of other similar valves used in non-safety related systems indicate that this type of bushing does occasionally fail (one or two on site failures per year).

C. Maintenance and Surveillances

This valve is tested every refueling outage in accordance with procedure 0-OSP-074.4, "Standby Steam Generator Feedwater Pumps/Cranking Diesels Test." If any problems are observed during the operation of the valve, action is initiated to correct the problem. The standby feedwater pumps are test operated on a monthly basis in accordance with procedure 0-OSP-074.3, "Standby Steam Generator Feedwater Pumps Availability Test." Additionally, the standby steam generator feedwater pumps and flowpath are used, per procedure, for routine heatup and cooldown of the units.

D. Replacement Parts/Valves

Spare bushings as well as material identical to the original bushings, in case they need to be fabricated again, have been ordered. Additionally, if DWDS-3-012 fails, spare valves identical to DWDS-4-012 (in the same position in Unit 4) are available for a total valve replacement.

E. Operator Training

Plant Operations personnel have been notified of the problems associated with DWDS-3-012 and instructed on recommended actions to take when manual valves do not operate freely. This instruction includes precautions on the use of valve wrenches.

4. Analysis of Event:

A. Standby Feedwater System

The Standby Feedwater System is not automatically initiated and requires operator action to be used. Although the system was installed and is used as a source of feedwater during normal startup, it could provide an additional source of water during accident mitigation for decay heat removal if loss of the safety related auxiliary feedwater sources should occur.

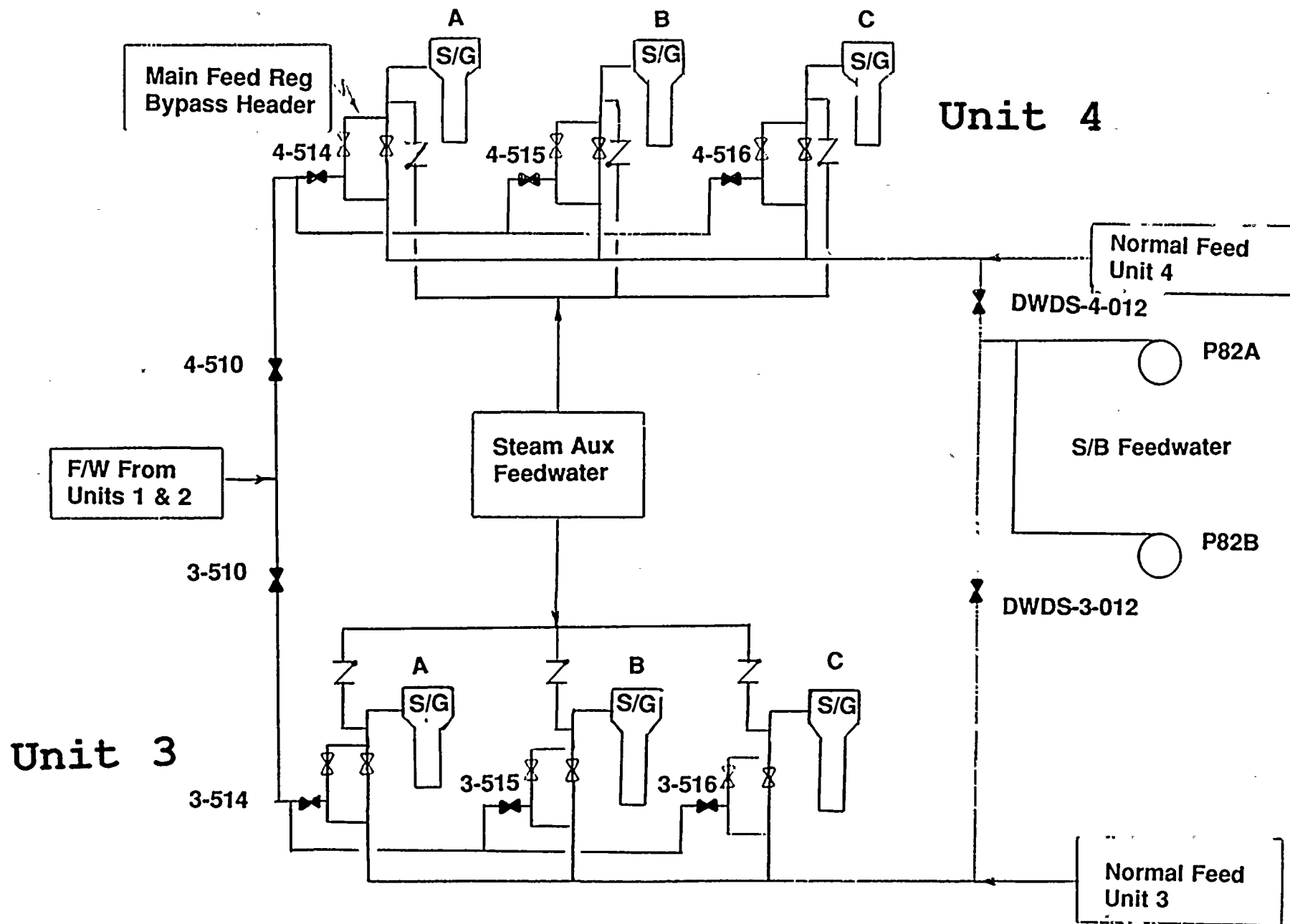
B. Redundancy

The failure of valve DWDS-3-012 does not prevent feedwater flow to the Unit 3 steam generators from the standby feedwater system. The Unit 3 steam generators can be fed from multiple flowpaths to provide redundancy to assure feedwater to the Unit 3 steam generators in the event main feedwater is unavailable and DWDS-3-012 is shut and can not be opened. These include the following:

1. Auxiliary feedwater pumps,
2. Standby steam generator feedwater pumps if Unit 4 is not operating, (via DWDS-4-012; 4-514, 4-515, or 4-516; 4-20-510; 3-20-510; and 3-514, 3-515, or 3-516),
3. Turkey Point Unit 2 feedwater pumps via 3-20-510,
4. Turkey Point Unit 4 main feedwater pumps via 4-20-510 and 3-20-510, and
5. Condensate pumps at lower steam generator pressures (upon RCS cooldown and depressurization)

C. Design Adequacy

A review was conducted of the Standby Feedwater System modification package and the design description in the NRC Safety Evaluation provided with Amendment Number 118 to Facility License Number DPR-31 and Amendment 112 to Facility Operating License Number DPR-41. The review determined that the current Standby Feedwater System is installed as described in the Safety Evaluation.



Sketch # 1

